

REMARKS

Upon entry of the instant amendment, claims 1-3, 6, 8 and 9 are pending. Claims 1, 2 8 and 9 have been amended. Claims 4, 5 and 7 have been canceled. A Request for Continued Examination is being filed herewith. It is respectfully submitted that upon entry of the amendment and consideration of the remarks below that the application is in condition for allowance.

CLAIM REJECTIONS – 35 U.S.C. § 102

Claims 1, 2 and 4 have been rejected under 35 USC § 102(b) as being anticipated by Morioka et al US Patent No. 5,831,412 (“the Morioka et al patent”). In order for there to be anticipation, each and every one of the elements of the claim. It is respectfully submitted that the claims recite subject matter not disclosed or suggested by the Morioka et al patent. For example, the claims now recite that the battery charge indicator now recites generating charge indication signals in three (3) states of the battery, namely an initial state, a transition state and a near full charge state. The claims also recite that the battery claim indicators are generated in both a constant current mode and a constant voltage mode without the need or added expense of measuring the voltage.

The Morioka et al patent teaches away from a battery charge indicator that can provide indications of the state of charge of a lithium ion battery in both a constant current mode and a constant voltage mode without the need or expense of a sensor for measuring the battery voltage. Indeed, The Examiner’s attention is respectfully directed to Fig. 8 of the Morioka et al patent which clearly illustrates a “Constant- Voltage Charge –State Detector” 83 which is used in connection with indicating a full charge state of the battery (*“The detector 83 is designed to monitor the charge voltage measured by the voltmeter 81 and to detect whether or not the secondary battery 77 is in a constant-voltage charge state. The full-charge detector 85 is of the type that detects whether or not the ratio of the charge current to the current the ammeter 79 detects when the battery 77 is charged at a constant current and a constant voltage has fallen*

below a predetermine value. The detector 85 determines that the secondary battery 77 has been fully charged, upon detecting that said current ratio has fallen below the predetermined value. The display 87 is provided for displaying the full-charge state of the lithium ion secondary battery 77.” Morioka et al patent , Col. 14, lines 33-43).

Thus , it should be clear that the battery indicator circuit in accordance with the present invention is not anticipated by the Morioka et al patent. Moreover, it is respectfully submitted that the Morioka et al patent actually teaches away from the invention by requiring a voltage detector to detect when the battery charger is in the constant voltage charging state. The need for a voltage detector increases the complexity and the cost of cell phone battery charger that is configured, for example, to be plugged into a vehicle cigarette lighter receptacle. Moreover, the Morioka et al patent requires that the system keep track of charging currents in both a constant current mode and a constant voltage mode in order to perform the ratio as discussed in the above quote. The present invention utilizes a simple comparator; does not need to keep track of charging currents and does not require a voltage sensor and thus provides a relatively simple indicator for use in such an application. Accordingly, the Examiner is thus respectfully requested to reconsider and withdraw the rejection of these claims.

CLAIM REJECTIONS – 35 U.S.C. § 103

Claims 3, 5, 7 and 8 have been rejected under rejected under 35 U.S.C. § 103(a) as being unpatentable over the Morioka et al patent further in view of Kaite et al US Patent No. 5,589,755 (the Kaite et al patent”). Claims 5 and 7 have been canceled. Thus, the rejection regarding those claims is obviated. With respect to Claims 3 and 8, it is respectfully submitted that the claims, as amended, recite subject matter not disclosed or suggested by either the Morioka et al patent or the Kaite et al patent, either singly or in combination. In particular, Claims 3 and 8 are dependent upon Claim 1. The Morioka et al patent has been discussed above. The Kaite et al patent does not disclose or suggest a battery charge indicator as indicated in the claims at issue. For these reasons and the above reasons, the Examiner is kindly requested to

reconsider and withdraw the rejection of these claims.

Claim 9 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over the the Morioka et al patent in view of the Kaite et al patent further in view of Matsunaga et al US Patent No. 6,771,043 (“the Matsunaga et al patent. It is respectfully submitted that the claim 9, which depends on Claim 1, recites subject matter, in combination, not disclosed or suggested by either the Morioka et al patent , the Kaite et al patent, or the Matsunaga et al patent, either singly or in combination. In particular, the Morioka et al patent and the Kaite et al patent have been discussed above. It is respectfully submitted that the Matsunaga et al patent does not disclose or suggest a battery charge indicator as indicated in the claims at issue. For these reasons and the above reasons, the Examiner is kindly requested to reconsider and withdraw the rejection of these claims.

Respectfully submitted,

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